

ABSTRACT

A separating machine for separating a thinned semiconductor substrate from a holding substrate after a semiconductor substrate is bonded to the holding substrate with a thermoplastic resin and a back surface treatment including the thinning of the semiconductor substrate is carried out. The separating machine includes a pair of vacuum adsorption heads for adsorbing the holding substrate-bonded thinned semiconductor substrate from the holding substrate side and from the thinned semiconductor substrate side, which is opposite to the holding substrate side. At least one of the vacuum adsorption heads has a moving means for moving the vacuum adsorption head to adsorb and hold the bonded substrates in a predetermined position together with the other vacuum adsorption head. At least one of the vacuum adsorption heads has a system for moving the vacuum adsorption head in a single swing direction for separating the bonded substrates after the above adsorption and holding operation is performed.